

Relationship between Fear of Missing Out and Social Media Engagement in a French population sample

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1 INTRODUCTION

The present study was carried out to determine whether the characteristics of the Fear of Missing Out (FoMO), defined as "the desire to stay continually connected with what others are doing" (Przybylski et al., 2013), were applicable to the French population. Additionally, it was investigated whether a link could be established between FoMO and Social Media Engagement (SME) in the same sample.

Based on current literature on the subject, we established four hypotheses. Firstly, according to previous results (Przybylski et al., 2013; Alt, 2015), we expected a positive relationship between measured fear of missing out and social media engagement. Secondly, we expected respondents with more available free time (i.e. students and retired or unemployed people) to show a higher frequency of use of social media, and consequently higher FoMO scores (free-time hypothesis). Third, we expected no differences between men and women in relationship to FoMO and SME scores. Finally, we hypothesized that younger participants would show higher frequency of use of social media and higher FoMO scores altogether, considering that the younger generation has been exposed to social media from a very young age.

2 METHODS

2.1. Scales. The scales used in this procedure were Przybylski's Fear of Missing Out scale (FoMOs) and Social Media Engagement Questionnaire (SMEQ). The FoMOs aims at measuring to what extent someone is afraid of "missing out" on important events, generally involving one's friends or relatives. Participants have to rate each of the 10 statements from 1 to 5, depending on how accurately the item describes them. The SMEQ is a five-item questionnaire measuring the frequency of use of social media. It measures how many times a week the participant used social media after waking up, at breakfast, at noon, during the evening meal, and before sleep.

2.2. Additional measures. In order to test for our hypotheses, we asked participants to provide their age and their socio-professional category (farmworkers; craftsmen, tradespeople and business owners; executives and superior intellectual professions; intermediary professions; employees and office workers; factory workers; retired; unemployed; others, including students). These official categories were created in France by the National Institute of Statistics and Economic Studies (*INSEE* in French) and are commonly used in questionnaires and studies where sample categorization is required.

2.3. Participants. The 1000 participants to the study were recruited one of two possible ways. 563 accessed the online version of the questionnaire through a link posted on various social media, and 437 were directly approached by research assistants in the *Versailles Chantiers* train station (Versailles, Yvelines, France), in the *Parly 2* shopping mall (Le Chesnay, Yvelines, France), in *La Défense* train station (La Défense, Paris, France), and in various universities to complete the paper version.

2.4. Analysis. In accordance with our hypotheses, different types of analysis were conducted

on the data using the *Statistica* software on a computer running Windows 10.

3 RESULTS

3.1. Sample analysis. The mean age was 29.63, with a median at 24 and a mode at 21 (n=111). 64.4% of the sample were women.

3.2. Item analysis. For items 4 and 8 of the FoMOs, responding didn't seem to follow a theoretical normal distribution, with mean scores of 1.61 and 1.99, and a mode at 1. They were the only items to cumulate more than half the sample on the mode (n=668 for item 4 and n=504 for item 8), possibly indicating low item sensitivity.

3.3. Internal consistency. Cronbach's alpha for the FoMOs was measured at 0.79, revealing an acceptable internal consistency. Analysis of "alpha if deleted" proved that deleting any of the 10 items would not improve internal consistency.

3.4. Factor analysis. In accordance with previous research, a single-factor solution proved to be satisfactory, explaining 86.44% of total variance.

3.5. Relationship between FoMO and SME. A moderate positive relationship ($r=0.33$; $p<0.001$) was found between fear of missing out and social media engagement. The higher the FoMO, the higher the engagement in social media.

3.6. Free-time hypothesis. We used socio-professional categories (see 2.2.) to divide our sample in two groups: the free-time group (retired people, unemployed and students) and the control group (all others). On the FoMOs, mean scores on all items for the free-time group were consistently higher than control scores. With the exception of item 8, all differences were significant ($p<0.005$ for items 6 and

10 ; $p<0.001$ for all others). According to SMEQ results, the free-time group consulted social media more than the control group in two of the five time frames: 15 minutes after waking up and 15 minutes before sleep ($p<0.001$). However, no significant differences were found between the groups for the other time frames.

3.7. Gender hypothesis. Few significant differences were found between genders. For FoMOs items, men scored significantly lower on items 6 ($p<0.05$), 8 ($p<0.001$) and 10 ($p<0.01$). The only difference found in SMEQ results was for item 1, with women consulting social media 15 minutes before sleep more often than men ($p<0.001$).

3.8. Age hypothesis. Our group comparison used a split at age 25 for two reasons. Firstly, it is a commonly used split in various polls and questionnaires. Secondly, it was close to the median of the sample ($m=24$). It was found that the younger group had consistently higher FoMO scores than their older counterparts. With the exception of item 8, all differences were significant ($p<0.001$ for all items). Social Media Engagement was found to be higher for the younger group on all SMEQ items ($p<0.001$).

4 DISCUSSION

4.1. Interpretation of results. In accordance with previous evidence (Przybylski et al., 2013; Alt, 2015) on which our hypotheses were based, we found a general moderate positive relationship between FoMO and Social Media Engagement in our sample.

Concerning our free-time hypothesis, we indeed found that people with more allotted free time, i.e. students, retired and unemployed people, showed a higher frequency of use than the control group. Consistently with our general conclusion, this higher frequency of use was associated with a higher FoMO score.

The differences found between genders were unexpected, yet worthy of attention. The three items for which men scored significantly lower than women – namely, 6, 8 and 10 – all describe a situation where the subject is active, whether it is by "sharing", "keeping tabs" or "keeping up". In other items, the subject of the action seems to be more passive ("it bothers me"; "I get worried"). This difference may indicate that women in our sample are more prone to actively look for information about their friends' activities when they are subject to the fear of missing out. More research is needed to investigate this difference.

Finally, our age hypothesis was confirmed by collected data, as younger individuals were found to have higher SMEQ and FoMO scores altogether. Age was overall negatively correlated with total FoMO score ($r=-.33$, $p<0.001$) and total SMEQ score ($r=-.25$, $p<0.001$).

4.2. Limitations. Despite our best efforts, our study may have limitations due to our translation of the scales. However, the similarity of our results to previously obtained evidence leads us to believe that the translation is correct and that our items accurately measure the fear of missing out.

4.3. Directions for future research. This study was an important crossing point, allowing for more detailed research on the subject of the fear of missing out and its link to various constructs. Further studies may be needed on the factors underlying the relationship between FoMO and SME. Furthermore, we suggest an investigation of the links between attachment styles (Hazan & Shaver, 1987), personality, and FoMO, since "avoidant" individuals, by nature, are less interested by their friends' and lovers' activities.

4.4. Summary. Interpretation of our results leads us to a similar conclusion than previous

research, and validates the French version of the FoMOs and SMEQ.

5 TABLES

Table 1. Distribution of responses by item (items 1 to 10, from top to bottom) including number of participants, mean, median, mode, mode frequency, minimum, maximum, and standard deviation.

Variable	Statistiques Descriptives (resultats-reversed)								
	N Actifs	Moyenne	Médiane	Mode	Fréquence du Mode	Somme	Minimum	Maximum	Ecart-type
RES_SOC_COU	1000	4,46800	5,00000	7,000000	422	4468,00	0,00000	7,00000	2,699308
RES_SOC_REV	1000	3,19200	3,00000	0,000000	330	3192,00	0,00000	7,00000	2,893702
RES_SOC_PDEJ	1000	2,04400	0,00000	0,000000	516	2044,00	0,00000	7,00000	2,648221
RES_SOC_DEJ	1000	1,87000	0,00000	0,000000	503	1870,00	0,00000	7,00000	2,397258
RES_SOC_DIN	1000	1,40400	0,00000	0,000000	623	1404,00	0,00000	7,00000	2,255631
FOMO_1	1000	2,34500	2,00000	1,000000	339	2345,00	1,00000	5,00000	1,227796
FOMO_2	1000	2,26200	2,00000	1,000000	365	2262,00	1,00000	5,00000	1,196155
FOMO_3	1000	2,45700	2,00000	1,000000	351	2457,00	1,00000	5,00000	1,328125
FOMO_4	1000	1,61000	1,00000	1,000000	668	1610,00	1,00000	5,00000	1,031971
FOMO_5	1000	3,00200	3,00000	4,000000	276	3002,00	1,00000	5,00000	1,273428
FOMO_6	1000	2,47500	2,00000	1,000000	324	2475,00	1,00000	5,00000	1,318755
FOMO_7	1000	3,06600	3,00000	4,000000	294	3066,00	1,00000	5,00000	1,320374
FOMO_8	1000	1,99200	1,00000	1,000000	504	1992,00	1,00000	5,00000	1,233474
FOMO_9	1000	3,15500	3,00000	4,000000	297	3155,00	1,00000	5,00000	1,287880
FOMO_10	1000	2,28400	2,00000	1,000000	372	2284,00	1,00000	5,00000	1,251763
FOMO_TOT	1000	24,64800	25,00000	Multiple	52	24648,00	10,00000	45,00000	7,314615
SMEQ_TOT	1000	12,97800	11,00000	0,000000	102	12978,00	0,00000	35,00000	9,776354

Table 2. Advanced consistency analysis, including Cronbach's Alpha and Standardized Alpha (on top) mean if deleted, variance if deleted, standard deviation if deleted, correlation between item and total, and alpha if deleted.

variable	Synthèse échelle : Moy.=24,6480 Ec-T.=7,31462 N actif:1000 (resultats-reversed)					
	Alpha Cronbach : ,786766 Alpha Standardisé : ,787919 Corrél. moy. inter-quest. : ,277433					
	Moy. si supprimé	Var. si supprimé	Ec-T. si supprimé	Corrél. Qst. Tot	Alpha si supprimé	
FOMO_1	22,30300	44,48319	6,669572	0,455781	0,768489	
FOMO_2	22,38600	44,69501	6,685432	0,458270	0,768250	
FOMO_3	22,19100	41,97852	6,479083	0,564454	0,754083	
FOMO_4	23,03800	45,46456	6,742741	0,497614	0,765245	
FOMO_5	21,64600	45,01468	6,709298	0,399051	0,775548	
FOMO_6	22,17300	44,41507	6,664464	0,415376	0,773803	
FOMO_7	21,58200	43,08528	6,563938	0,497729	0,763075	
FOMO_8	22,65600	45,88766	6,774044	0,361764	0,779743	
FOMO_9	21,49300	43,72995	6,612863	0,473618	0,766232	
FOMO_10	22,36400	44,44950	6,667046	0,445684	0,769721	

Table 3. Student's t-tests on the mean scores for FoMOs items for group OCCUPE (control group) and group LIBRE (free-time group). P-values are indicated in the 5th column, significant if red.

Tests t ; Classmt : CATEG_TEMPS (resultats-reversed)											
Groupe1: OCCUPE											
Groupe2: LIBRE											
Variable	Moyenne OCCUPE	Moyenne LIBRE	Valeur t	dl	p	N Actifs OCCUPE	N Actifs LIBRE	Ecart-Type OCCUPE	Ecart-Type LIBRE	Ratio F Variances	p Variances
FOMO 1	2,07415	2,58712	-6,74067	998	0,000000	472	528	1,191267	1,210323	1,032248	0,724864
FOMO 2	2,00424	2,49242	-6,57787	998	0,000000	472	528	1,181952	1,162319	1,034067	0,707537
FOMO 3	2,05720	2,81439	-9,38424	998	0,000000	472	528	1,258057	1,287666	1,047625	0,605402
FOMO 4	1,49364	1,71402	-3,38877	998	0,000730	472	528	0,977432	1,068628	1,195309	0,047457
FOMO 5	2,84322	3,14394	-3,75232	998	0,000185	472	528	1,277270	1,254261	1,037026	0,683976
FOMO 6	2,34322	2,59280	-2,99965	998	0,002770	472	528	1,345274	1,284451	1,096949	0,301253
FOMO 7	2,75000	3,34848	-7,34263	998	0,000000	472	528	1,316642	1,259408	1,092956	0,320683
FOMO 8	2,06992	1,92235	1,89106	998	0,058905	472	528	1,307087	1,160560	1,268451	0,007932
FOMO 9	2,95339	3,33523	-4,73030	998	0,000003	472	528	1,344150	1,208497	1,237100	0,017516
FOMO 10	2,15254	2,40152	-3,15394	998	0,001659	472	528	1,255998	1,237368	1,030339	0,737705
FOMO_TOT	22,74153	26,35227	-8,03701	998	0,000000	472	528	7,392035	6,813381	1,177071	0,068673

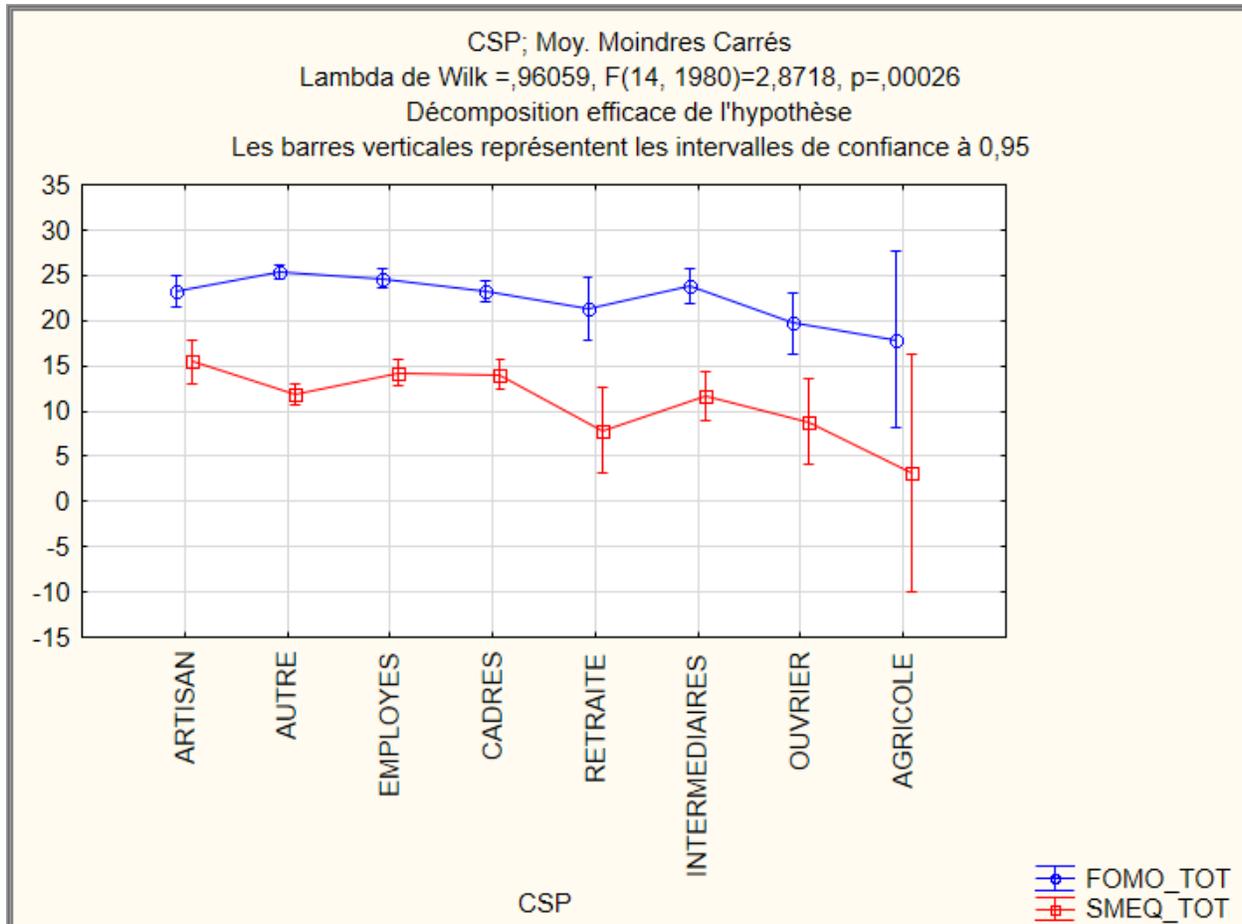
Table 4. Student's t-tests on the mean scores for FoMOs items for group 0 (male respondents) and group 1 (female respondents). P-values are indicated in the 5th column, significant in red.

Tests t ; Classmt : SEXE (resultats-reversed)											
Groupe1: 1											
Groupe2: 0											
Variable	Moyenne 1	Moyenne 0	Valeur t	dl	p	N Actifs 1	N Actifs 0	Ecart-Type 1	Ecart-Type 0	Ratio F Variances	p Variances
FOMO 1	2,36646	2,30618	0,743219	998	0,457524	644	356	1,236759	1,212176	1,040972	0,674958
FOMO 2	2,29969	2,19382	1,340675	998	0,180331	644	356	1,199507	1,188710	1,018249	0,853917
FOMO 3	2,50155	2,37640	1,427511	998	0,153745	644	356	1,337925	1,308221	1,045928	0,638423
FOMO 4	1,60404	1,62079	-0,245636	998	0,806015	644	356	1,017750	1,058575	1,081834	0,393761
FOMO 5	2,99224	3,01966	-0,325969	998	0,744516	644	356	1,271142	1,279153	1,012643	0,885999
FOMO 6	2,54503	2,34831	2,263283	998	0,023832	644	356	1,326658	1,296592	1,046914	0,631273
FOMO 7	3,11180	2,98315	1,476231	998	0,140197	644	356	1,317398	1,323566	1,009387	0,913280
FOMO 8	2,09472	1,80618	3,562640	998	0,000384	644	356	1,246595	1,188710	1,099763	0,316048
FOMO 9	3,15373	3,15730	-0,042029	998	0,966484	644	356	1,272866	1,316409	1,069587	0,465203
FOMO 10	2,36646	2,13483	2,811465	998	0,005028	644	356	1,276365	1,193324	1,144017	0,155795
FOMO_TOT	25,03571	23,94663	2,259063	998	0,024095	644	356	7,280236	7,334654	1,015005	0,866345

Table 5. Student's t-tests on the mean scores for FoMOs and SMEQ items for group JEUNE (under 25 years old) and group VIEUX (over 25 years old). P-values are indicated in the 5th column, significant in red.

Tests t ; Classmt : CATEG_AGE (resultats-reversed)											
Groupe1: VIEUX											
Groupe2: JEUNE											
Variable	Moyenne VIEUX	Moyenne JEUNE	Valeur t	dl	p	N Actifs VIEUX	N Actifs JEUNE	Ecart-Type VIEUX	Ecart-Type JEUNE	Ratio F Variances	p Variances
FOMO 1	2,06278	2,57220	-6,6620	998	0,000000	446	554	1,165267	1,230719	1,115493	0,227419
FOMO 2	1,98655	2,48375	-6,6748	998	0,000000	446	554	1,157214	1,181804	1,042951	0,643299
FOMO 3	1,94843	2,86643	-11,5641	998	0,000000	446	554	1,210269	1,277228	1,113713	0,234283
FOMO 4	1,45291	1,73646	-4,3577	998	0,000015	446	554	0,972095	1,061852	1,193191	0,051231
FOMO 5	2,85202	3,12274	-3,3589	998	0,000812	446	554	1,268666	1,265521	1,004976	0,953476
FOMO 6	2,34305	2,58123	-2,8491	998	0,004475	446	554	1,374334	1,263513	1,183111	0,060941
FOMO 7	2,63901	3,40975	-9,5836	998	0,000000	446	554	1,297258	1,236857	1,100054	0,287704
FOMO 8	1,97758	2,00361	-0,3316	998	0,740269	446	554	1,259370	1,213243	1,077485	0,405121
FOMO 9	2,87444	3,38087	-6,2996	998	0,000000	446	554	1,329838	1,207749	1,212395	0,031833
FOMO 10	2,09193	2,43863	-4,3934	998	0,000012	446	554	1,198530	1,273185	1,128458	0,181992
FOMO_TOT	22,22870	26,59567	-9,8228	998	0,000000	446	554	7,184045	6,826635	1,107451	0,255217

Table 6. Evolution of FoMOs and SMEQ scores in function of socio-professional category. From left to right : craftsmen, tradesmen and business owners ; others ; employees ; executives and superior intellectual professions ; retired people ; intermediary professions ; factory workers ; farmers. The blue line is the total FoMOs score and the red line is the total SMEQ score.



6 REFERENCES

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